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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/455,102	12/06/1999	MICHAEL PERSSON	AN05939P1-US	4651

7590

05/12/2006

RALPH J MANCINI
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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/455,102

Applicant(s)

PERSSON ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Judgement rendered 31 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 and 35-106 is/are pending in the application.
- 4a) Of the above claim(s) 14,18-21,33,35-57,64,65,72-97,100 and 103-106 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,11-13,15,17,22-24,26,27,29-32,58-63,66-71,98,99,101 and 102 is/are rejected.
- 7) ☒ Claim(s) 3,10,16,25 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>4/28/2006</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claims 1-33 and 35-106 remain in the application. Claims 1-13, 15-17, 22-32, 58-63, 66-71, 98-99, and 101-102 have been treated on the merits.

Ex parte prosecution resumed

1. Interference No. 105148 has been terminated by a decision mailed August 31, 2004, unfavorable to applicant. *Ex parte* prosecution is resumed. The following issues regarding remaining claims need to be resolved. Any amendment to the claims to provide a new claim list should include cancellation of claims indicated in the Judgment decision to correspond to the count 1, i.e., 14, 18-21, 33, 35-57, 64, 65, 72-97, 100 and 103-106. Claims 14, 18-21, 33, 35-57, 64, 65, 72-97, 100 and 103-106 have not been treated herein on the merits.

Claim interpretation

2. The claims require mixing (i) an aqueous solution of alkali metal silicate with (ii) an aqueous phase of silica-based material having a pH of 11 or less and (iii) a metal salt other than an aluminum salt. Applicants (instant page 3, lines 19-28) provide examples of said aqueous phase of silica-based material having a pH of 11 or less, which include among others clays of smectite form and colloidal aluminum-silicate (e.g., clay).

An aqueous alkali metal silicate solution is a metal salt other than aluminum. Aqueous alkali metal silicate is available at a pH of 11-12.5 as shown by MSDS, J.T.Baker online @ www.jtbaker.com/msds/englishhtml/s4982.htm , page 4 of 7, printed 4/24/2006; and is known to be stable at or about pH of 11 as discussed in Iler, The

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Colloid Chemistry of Silica and Silicates, (Cornell University Press, Ithica, NY, 1955, page 20).

"During patent examination, the pending claims must be 'given *>their< broadest reasonable interpretation consistent with the specification.' > In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).

The process appears to read on mixing an aqueous solution of alkali metal silicate with itself to form an aqueous polysilicate microgel.

The term microgel has not been specifically defined in the specification and therefore takes its plain meaning in the art, which would be a polysilicate gel of micron or submicron size. It is noted that the claims do not define any particle size of the gel material.

Claim Objections

3. Claims 63 and 69 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. While the process may be further limited by reciting a dilution step, claims 63 and 69 do not further limit the compositions of claims 8 and 26, respectively, since neither the independent nor the dependent claims define the concentration of the ingredients for the dilution. For the composition claims 63 and 69, the dilution is irrelevant since the composition is in a solution and/or suspension form and cannot be said to further limit the independently claimed compositions.

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4. Claims 15-17, 22, and 66 are objected as dependent on claim 14, which is part of the above noted unfavorable decision to applicants. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 30 does not define the basis for the "%", e.g., weight, volume based on the microgel or the aqueous composition.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-2, 4-9, 11-13, 23-24, 26-27, 29, 31-32, 58-61, 63, 66-67, and 69-71 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Iler, US 2,727,008. Iler (example 1) discloses (ii) treating sodium silicate solution having a $\text{SiO}_2:\text{M}_2\text{O}$, where M is alkali metal, 3.25:1, with an ion-exchange resins in the hydrogen form. Said treatment would have resulted in a silica material having a pH of 11 or less. Said treatment was followed by alkalizing treatment of said effluent with sodium silicate. Said ion-exchange treatment and alkalization treatment were repeated. Each treatment with the addition of the sodium silicate increases the concentration, which was characterized at 5.8, 8.0, and 10.0 % by weight. Said products were tested by titrating between pH of 4 to 9 with sodium hydroxide (a metal salt other than aluminum, see instant claim 2).

The Iler products are characterized as (column 5, lines 8-14) having a particle size of 3-10 millimicrons and a surface area in excess of 1000 m^2/g (column 6, lines 17-23).

It is noted that sodium silicate is a sodium salt of silicic acid and therefore reads on the instant claims (see claim 1 limitation, "a metal salt other than an aluminum salt). Claims 2 and 5 read on the titration with sodium hydroxide.

Claims 23-24 are drafted in product-by-process format and appear to read the same products of Iler.

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The microgel structure claimed would have been inherent to the Iler compositions at least to some extent based on the Iler characterization (column 2, lines 56 et seq) of the initial sol as having at least some aggregate formation in the form of aggregates, chains or networks of chains.

To the extent Iler differs from the claims in the characterization of the materials as a polysilicate microgel, applicants do not define the term polysilicate microgel as have a specific meaning or an art recognized meaning. Since the materials are made by the same or substantially the same process and have particle size and surface area parameters that read on the claimed product, it is reasonable to conclude that the products are microgels. To the extent said gel structure differs for the claims, some variation in the process limitations of concentration and pH is within the level of one having ordinary skill in the art at the time of applicants' invention.

10. Claims 1, 4-6, 8-9, 11-12, 15, 17, 22-24, 26-27, 29-30, 32, 58-63, 66-71, 98-99 and 101-102 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kaliski, US 5,116,418. Kaliski (examples) discloses mixing very fine particle kaolin clay slurries (60 or 70 wt% solids, which are aluminosilicates, i.e., silica-based material having a pH of 11 or less, instant claimed component (ii)) with aqueous sodium silicate (instant claimed component (i)) and calcium chloride (instant component (iii)) and sodium aluminates to form complex functional microgels. The pH values and the $\text{SiO}_2:\text{M}_2\text{O}$ ratio of the components would have been inherent to those available.

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To the extent Kaliski differs from the specific pH or the SiO₂:M₂O ratio of the specific components some variation would have been expected as a known rate determining variable as taught by Kaliski at column 11, lines 11-50.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1, 2, 4-9, 11-13, 15, 17, 22-24, 26, 27, 29-32, 58-63, 66-71, 98, 99, 101 and 102 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 10/007,885, corresponding to US 2003/0024671. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims encompass and/or substantially overlap the copending claims. The instant claims require a metal salt other than aluminum. This reads on the addition of sodium silicate,

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which is a sodium salt of silicic acid. Furthermore and as shown in example 2, which the claims read on, the sols may further be alkalized by the addition of sodium hydroxide. The S-value is the degree of aggregation or microgel formation. See also paragraph [0008] of PGPUB US '671.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

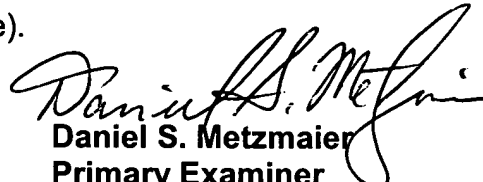
13. Claims 3, 10, 16, 25, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM